



Post-Operative Care in Tracheostomy - A Must Know for All Otorhinolaryngologists

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Received Date: April 25, 2024; **Published Date:** May 20, 2024

Abstract

In the current times, where in, as budding surgeons we keep ourselves fixated on learning recent advances and to improve our surgical skill, it is essential that we understand the importance of postoperative management in all patients, for it plays a pivotal role in the outcome. Tracheostomy is very common and important surgery in the practice of otorhinolaryngology and thus we have tried to describe in a nutshell the approach to a patient after the tracheostomy surgery, highlighting the various points to consider in immediate and late postoperative period, including complications. This will help especially budding surgeons to ensure ideal outcome among their patients following surgery.

Keywords: Tracheostomy Care; Tracheostomy; Tracheostomy Tube Change; Decannulation

Introduction

Tracheostomy is of the emergency airway surgeries performed by otorhinolaryngologists on a day-to-day basis and has a variety of indications. It is the procedure done to create a stoma in the trachea and connecting it externally, thus providing access to airway to maintain ventilation to the patient. Acquiring the skill to perform this surgery in acute and critical settings is essential to all of us, otorhinolaryngologists as this ensures the securing of airway, but it does not stop there we must also know to manage the postoperative complications and ensure adequate postoperative care is being given to these patients. The indications for tracheostomy can be emergency or elective.

Emergencies such as acute airway obstruction due to foreign bodies, trauma to head and neck region, presence of deep neck space infections and many others where in patient might often present with stridor and dyspnea. Elective indications are cases requiring prolonged ventilatory support, neurological illnesses, need for frequent suctioning in cases with copious lower respiratory tract secretions and cases after surgery for head and neck malignancies [1]. But our role does not end with placement of the tracheostomy tube, on the contrary it only begins there, as we must now be aware of the post-operative care, be able to preempt possible complications and their corresponding management. Here we have discussed the post-operative approach in a concise manner.

Immediate Postoperative Period Considerations

After the surgery the tube must be placed and well fastened and a sterile dressing is in place. The vitals must be monitored ensure bilateral air entry. Post-operative radiograph can be taken to ensure the correct position of the tube, and to rule out possibilities of pneumothorax. Subcutaneous emphysema is another immediate complication which must be bore in mind [2].

Mechanical Ventilation: After the procedure the patient can be placed on original mode of ventilation if he or she was on ventilatory support or be slowly weaned off to room air is the tube was placed for other purposes. But we must assess the condition of the patient to alter the modes as following tracheostomy the airway resistance will reduce and hence, we must according adjust the pressures of ventilation.

Cuff Pressures: The cuff pressure is an important aspect- the tracheostomy tube cuff pressure must be ideally maintained at about 20-30cm H₂O in order to ensure we don't cause necrosis of the cartilage. This must be taught to the nursing staff and care givers, who must regularly deflate and re inflate the cuff.

Tracheal Suctioning: Suctioning is to be done gently. Pressure should not go over 150 mm Hg as research has indicated that greater pressures might result in atelectasis, hypoxemia, and trauma. Depending on the patient's age, in newborns we must maintain around 60-80 mm Hg, infants and pediatric cases, for 80-100 mm Hg and in adults about 100-150 mm Hg.

Wound Site and Stoma Care: The wound site must be kept clean and dressings must be done daily. There is always a risk of stoma site infection and stomal necrosis.

Late Considerations Beyond 1st Week of Surgery

Tube Change

The decision of timing of tube change depends on the type of tube inserted and also its functionality. In the event of cuff leak or faulty tube with inadequate delivery to the lung, or presence of tube block we must plan change immediately. But when the tube is changed within 48 to 72 hours the tract is still raw and has not yet formed well, at this juncture the surgeon must be prepared to face several complications. Preparations during early tube change- there must be suction apparatus kept handy with a sterile suction tip. A tracheostomy tray with a tracheal dilator is kept to dilate the stoma when placing the new tube. Standby endotracheal intubation apparatus and same size ET tube must be kept ready with a crash cart as there can be risk of inability to place the tracheostomy tube, laryngotracheal spasm. There can also be risk of bleeding in this setting. Tube change is

ideally done after 7 -10 days, by which time most of these complications are avoided as the tract is usually well formed, but one must nevertheless be prepared to face a difficulty if were to arise [3].

Swallowing Assessment

Prior to starting oral feeds, the swallowing assessment must be done to ensure no glottal insufficiency with presence of mobility of both vocal cords and intact reflexes. Then feeds must be started gradually and the tube cuff must be kept inflated during feeds. The assessment of patient's general condition and orientation is most important prior to starting feeding as patients tend to develop mild difficulty adjusting to swallowing with a tube *insitu*.

Phonation

If the tube is being placed for a prolonged duration in a conscious and oriented patient, then speaking valve is needed. Fenestrated tubes are available with speaking valve which allow phonation.

Home Care

Education of the patient and the attenders regarding care for the tracheostomy and the tube is imperative. They must be trained to suction and clean the site and do dressing. They are also taught to perform tube change and when patient is sent home with a permanent if long standing tracheostomy, dual lumen tubes are placed so they can clean the inner tube frequently. The rules for sterility whole handling the tube must be emphasized and we have seen that training the attenders to perform all these procedures under supervision at the hospital prior the discharge ensures better outcomes [4].

Decannulation

This is the procedure to finally remove the tracheostomy tube and allow for the stoma to heal and close. But decision of decannulation depends on the indication for the placement of the tube and the overall condition of the patient. There are several factors to consider prior to planning decannulation. Considerations or indications to plan decannulation include- improvement in general condition with regards to consciousness and orientation especially for cases who were tracheostomized following head injury or neurosurgical interventions, next is no further need for mechanical ventilation and resolved lung infections thus no need to suction and clear thick secretions through the tube. Once patient can consciously cough and swallow which ensures no risk of aspiration, we can block the tube or cork it for a minimum of 48- 72 hours and if patient is able to adequately breathe and maintain saturation, we can decannulate, and continue to monitor for the 1st 24 hours. Depending on the

condition and indication of tracheostomy the decannulation timing differs. Those with low Glasgow coma scale, or having Guillain barre syndrome or other causes needing longstanding ventilation may require the tracheostomy tube for several months.

When ideal care has been given and the patient withstands decannulation the stoma usually heals well. In case of wound infection or stomal site necrosis the outcome is hampered and stoma might develop granulation or cause scarring and sometimes even subglottic stenosis, thus making immediate postoperative care vital to outcome.

Conclusion

Daily monitoring and interdisciplinary evaluation are mandatory to ensure a good outcome in post tracheostomy cases. The education and training of nursing staff and care givers plays a pivotal role. There are care bundles and protocol posters placed in most intensive care units and wards for tracheostomy care but they must be emphasized and reiterated by us as surgeons in order to safeguard the patient outcome. Though a lot of importance is given to the surgical incisions and intraoperative complications

in tracheostomy, quite often it is the post-operative care which determines the outcome and successful, uneventful decannulation.

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